

## \* NOTICES \*

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2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the clamp attached to the corrugate tube which protects wire harness.

[0002]

[Description of the Prior Art] Cut the corrugate tube which consists of a synthetic resin of bellows shape to a longitudinal direction, provide a crack, open this crack, and wire harness is inserted, This wire harness is covered and protected with a corrugate tube, a clamp is provided in said corrugate tube, and it fixes to the body using this clamp. The clamp which fixes the conventional corrugate tube to the body is an integrally molded product which has structure shown, for example in drawing 4 (a) and which consists of synthetic resins. That is, this clamp is provided with the main part 1 and the covering device 3 connected with this via the hinge region 2. The nail holder part 4 is formed in the edge of said main part 1, and the locking claw 5 is formed in the edge of the covering device 3. The subring-like grasping paws 6 and 7 set a predetermined interval to the inner circumference of the main part 1 and the covering device 3, and are formed in it. [ two or more ] And while close the edge of the main part 1 and the covering device 3, making it ring form, stuffing the locking claw 5 into the nail holder part 4, stopping it and surrounding a corrugate tube by the main part 1 and the covering device 3, As shown in drawing 4 (b), the grasping pawl 6 is engaged to the trough 21 of the periphery of the corrugate tube 20, and a clamp is attached to the corrugate tube 20.

[0003]

[Problem(s) to be Solved by the Invention] However, there were the following problems in an above-mentioned clamp. That is, in order to attach a clamp to a corrugate tube, a grasping pawl needs to grasp the trough of the periphery of a corrugate tube certainly. Therefore, when the paths of a trough differed, the clamp from which the shape of a grasping pawl differs for every path of a trough was required, and there was a problem that the clamp of various sorts had to be prepared as a result. Therefore, management cost went up and it was not able to respond to the design variation of the corrugate tube promptly.

[0004]

Means for Solving the Problem]Were made that this invention should solve the above-mentioned problem, and are a clamp attached to a corrugate tube and it has the covering device connected with a main part and this main part, Said main part and a covering device form a ring like part surrounding a corrugate tube by stopping mutually, and a grasping part which elastic deformation is possible to a diameter direction of said ring like part, and grasps a corrugate tube is provided in an inner surface of said main part and a covering device.

[0005]As mentioned above, a clamp of this invention forms a ring like part by a covering device connected with a main part and this main part, surrounds a corrugate tube, provides it in an inner surface of a main part and a covering device, and grasps a corrugate tube in a \*\*\*\*\* grasping part. Under the present circumstances, since elastic deformation is possible for said grasping part to a diameter direction (diameter direction of a corrugate tube which in other words was grasped) of said ring like part, even if a path of a trough of a corrugate tube changes, a corrugate tube can be grasped certainly. Therefore, it can respond to a corrugate tube of various sorts in which paths of a trough differ by one kind of clamp.

[0006]

[Embodiment of the Invention]Hereafter, based on a drawing, an embodiment of the invention is described in detail. Drawing 1 is a perspective view of one embodiment of the clamp concerning this invention, and drawing 2 is an A-A sectional view of drawing 1. In drawing 1 and 2, it is the covering device by which connects 11 with a main part, 12 was connected with the hinge region, and 13 was connected with the main part 11 by the hinge region 12. 14 and 15 are the grasping parts provided in the inner surface of the main part 11 and the covering device 13, respectively. This embodiment is an integral-moulding object which consists of synthetic resin materials, and consists of the covering device 13 which has an approximately semicircular arc part as well as the main part 11 which has an approximately semicircular arc part, and was connected with the main part 11 by the hinge region 12 at one. The two grasping parts 14 and 15 which grasp a corrugate tube are formed in these main parts 11 and the covering device 13 so that it may project inside. The locking claw 16 which was suitable inside is formed at the tip of the covering device 13. On the other hand, the suspending portion 17 which receives the locking claw 16 is formed at the tip of the main part 11. The insertion hole 18a where the bracket (not shown) by the side of the body attached is inserted in the main part 11, and the suspending portion 18b by which a bracket is stopped are formed.

[0007]The feature of this embodiment is that the grasping part 14 is formed in the internal and external directions of the main part 11 so that elastic deformation is possible. That is, both sides are connected and supported by the main part 11 by the tape shape part 14a at one, and the grasping part 14 can change height H to the main part 11 of the grasping part 14 by bending the tape shape part 14a elastically. The height to the covering device 13 is changeable by bending the tape shape part 15a elastically similarly about the grasping part 15.

[0008]The clamp of this embodiment is attached to a corrugate tube as follows. That is, as shown in drawing 3, the suspending portion 17 of the main part 11 is made to stop the locking claw 16 of the covering device 13, a ring like part is formed so that a corrugate tube (not shown) may be surrounded, and a corrugate tube is inserted in the grasping parts 14 and 15 which counter. Under the present

circumstances, if the interval D of the grasping parts 14 and 15 is set up smaller than the path of the trough of the periphery of the corrugate tube to attach, by the elastic deformation of the tape shape parts 14a and 15a, the grasping parts 14 and 15 will press the trough of the periphery of a corrugate tube, and it will grasp them. Insert the bracket 20 by the side of the body in the insertion hole 18a of the main part 11, the suspending portion 18b is made to stop the hole 20a of the bracket 20, and the main part 11 is fixed to the body side.

[0009] Since the interval D of the grasping parts 14 and 15 is elastically adjusted according to the path of the corrugate tube to attach, the clamp of this embodiment can grasp certainly the corrugate tube of various sorts in which paths differ by one kind of clamp. Since a grasping part is grasped by the trough of a corrugate tube, a clamp does not shift with a corrugate tube. Therefore, when attaching wire harness to the other party (body), the fault of being hard to attach by position gap of a clamp is lost. Although the mounting part 18 was formed in the clamp by this invention, it cannot be overemphasized that that shape is not limited to this, may form a clip in this clamp, may establish a hole in the other party, and may insert and attach a clip to this hole, and there may not be any mounting part.

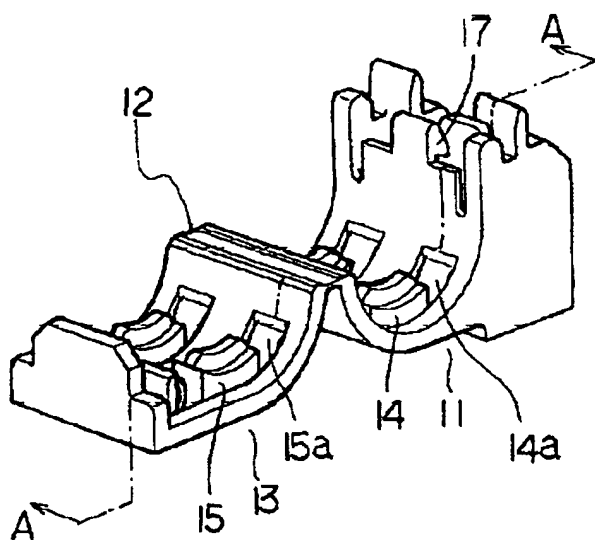
[0010]

[Effect of the Invention] Since the corrugate tube of various sorts in which paths differ by one kind of clamp can be grasped according to this invention as explained above, it can respond to a design variation promptly, and there is an outstanding effect of also reducing management cost.

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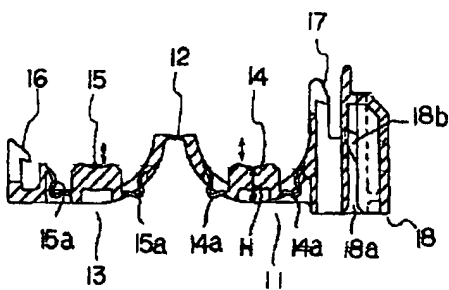
[Translation done.]

Drawing selection Representative drawing



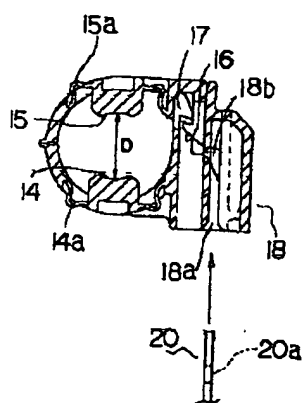
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Drawing selection Drawing 2



[Translation done.]

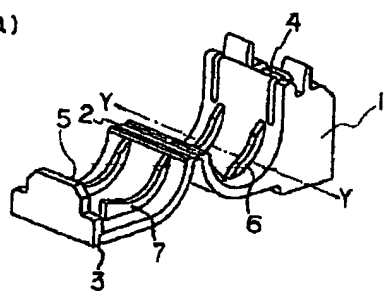
Drawing selection Drawing 3



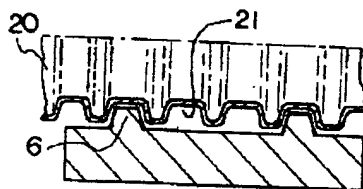
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Drawing selection Drawing 4

(a)



(b)



[Translation done.]